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News and Views

from the Farm Management Staff

UNITED STATES DEPARTMENT OF AGRICULTURE
FEDERAL EXTENSION SERVICE
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AGRICULTURE

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Dear Farm Management Extension Workers:

Extension Teaching

As some of you can attest, there was an excellent session on "Teaching Agricultural Economics" in the annual meeting of the American Farm Economic Association at Ames, Iowa, August 10-13. Ten papers were offered but only five could be read and discussed in the three hours available. Four of the 10 papers are so directly related to our work and yours that we think you will want to read them before the proceedings issue of the Journal of Farm Economics reaches you. We are enclosing copies. They are:

Lessons from Adult Teaching, by R. J. Becker, Pennsylvania State University.

Reorienting the Training of Agricultural Economists in Conformity with Changing Research Needs, by Alan R. Bird, Michigan State University.

Some Training Needs of Extension Workers in Farm Management and Production Economics, by E. P. Callahan, Federal Extension Service.

Foundation and Fashions in Farm Management Teaching, by A. B. Lewis, Cornell University.

In discussions during the session it was said that strengthening under-graduate teaching of farm management in a number of the State colleges of agriculture would help to better equip county agents to deal with farm management problems in their counties.

Illinois Farm Management Newsletter on Credit

Alvin T. Anderson in Illinois has written what we think is a very effective but simple piece of material for use in credit educational work. We are attaching a copy of the Illinois Farm Management Newsletter No. 212, entitled "Are You a Good Credit Risk?" With this very challenging title it appears to us that he has produced an excellent piece of material for mass media circulation.

AEP-110 (9/60)

You may want to think about doing something similar in your State. We imagine a good leaflet with this title placed on county agent bulletin racks would attract a lot of attention -- and be useful to a lot of farmers.

Farm Management Problems Posed by Industrial
Development in Farming Areas

In recent decades the fences between farm and non-farm people are being lowered. Nationally, nearly a third of the income of farm people is from non-farm sources. And 24 percent of the farm wives in the United States worked for pay in 1958 as compared with 17 percent in 1950.

In this setting, a South Carolina study comes up with the thought-provoking conclusion that "The farmers who had no off-farm income made the most rapid progress in developing their dairy enterprises and increasing their net worths." The study is reported in Clemson Experiment Station Bulletin 482, "Financing Development of Small Grade A Dairy Farms," April 1960. The farmers in the study who had no off-farm income borrowed more money to develop their dairy enterprises faster, and increased their net worths more rapidly.

How come? What goes on here? Is this finding necessarily in conflict with the prevalent idea that industrialization of rural areas is good? Could it be that a family on a small Piedmont "ex-cotton" farm, committing itself wholly to the development of a dairy enterprise, has a built-in forced-savings plan? If so, are the savings made at the expense of the family's social, educational, and cultural growth? Or does the challenge the family has set for itself stimulate its growth? Under what conditions is it better for a farmer to concentrate on his farm business? To become a part-time, or a "time-and-a-half" farmer? To shift to another occupation? Of course, one family's best answers to questions of this nature are likely to differ from those of another.

We wonder if an inverse relationship between off-farm income and the rate of increase in net worth (at a given level of total income) occurs in other farming situations in the United States. Got any ideas?

Expansion of Rural Development in Pennsylvania

Plans have been formed in Pennsylvania for expanding rural development activities on an area basis to more than half the counties of the State. In general, those counties which have the most pressing problems with respect to small farms, unemployment, and exhaustion of natural resources have been chosen. These counties have been grouped into five areas and a rural development agent will be assigned to each area.

Monroe J. Armes, farm management extension specialist, has been asked to spend practically full time in organizing and setting up this expanded program. The pattern of activity will follow that already under way in the pilot counties, namely:

- Intensive on-the-farm educational assistance to the farm family.

- Assistance and counseling to local groups in appraising resources for improving agriculture or introducing new industry to supplement farm income.
- Cooperation with other agencies and groups in furnishing information as to employment opportunities.
- Providing information, advice, and counsel to individual families seeking a new farming venture or making a change to a new type of employment.

Mr. Armes, in his remarks to the county agents, stated that: "Extension's role in Rural Development Program is that of educational leader, not of administrator ... charged with the responsibility of cooperating with other agencies not with directing their programs. ... Extension really has a dual role to play ... in the one role it carries out its traditional extension program with special emphasis on the problems of the low-income farm families. In the other role it cooperates with and works through other agencies and groups in dealing with problems which may be entirely outside of agriculture. ... The over-all principle on which Rural Development operates is that people are able to identify their problems and decide what needs to be done providing they have the necessary information and leadership."

Recent Insurance Materials

Extension and research workers appear to have sharply increased their educational work in the area of Insurance in recent years. In the process, a number of excellent new materials have been published and released. Some of the most recent are as follows:

Insurance in the Farm Business -- Cornell Ext. Bul. 1003.

Insurance Facts for Farmers -- F. B. No. 2137, USDA.

Property and Casualty Insurance -- E. C. 57-1121 -- Nebraska.

Casualty Insurance for Vermont Families -- Brieflet 1052, Vermont.

Insurance Program of Indiana Farmers -- Station Bulletin 609, Purdue.

Legal Liability Risks -- Agr. Inf. Bul. No. 122, USDA.

Federal Crop Insurance -- PA-408, FCIC, USDA.

What About Crop Insurance -- PA-421, FCIC, USDA.

Life Insurance for Farm Families -- ARS 43-92, USDA.

Life Insurance for Farm Families -- Cornell Ext. Bul. 1002.

Life Insurance for Vermont Families -- Circular 127, Ext.

Life Insurance for Farmers -- Circular E-679, Oklahoma.

"Fitting Insurance to Farmers' Needs and Circumstances," by Ralph Botts, is a very informative article in the November 1953 issue of Agricultural Finance Review. It looks at the life of a farmer in four stages and examines the insurance program that would be appropriate at each step. It considers the various risks that confront farmers during several periods in their lives, and the way in which insurance can be adapted to changing circumstances.

Oklahoma Extension Service has prepared a movie to show how life insurance can contribute to family security. This is a very useful feature along with the above-mentioned circulars as the basis for a good discussion program.

We shall appreciate getting sample copies of materials from your State.

Recent 100-Page Supplement of the Farm Income Situation

In view of the importance of the farm income problem you have all probably noticed the July issue of the Farm Income Situation with its 100-page supplement "State Estimates of Farm Income 1949-59." Individual State figures on trends in farmers' gross income, net income, production expenses, cash receipts by commodity groups, etc., have usefulness as general background for farm management programs, extension program planning, and other fields of endeavor. The July issue of the Farm Income Situation also contains a special article "Farm Income Concepts: Their Meaning and Measurement." Among other things this discusses the bases for estimates of income of farm operators from farming and of income of farm population from all sources, a distinction that is becoming more and more important in these days of increasingly mixed sources of income.

All of this reminds us of still another special article entitled "Farm Capital Gains and Losses, 1940-1959," by Ernest Grove in the Farm Income Situation for last April. We think you may be interested in this also.

New Bulletins by Regional Farm Management Committees

In recent months several new bulletins have been published by our regional farm management extension committees. The Southern Committee has published one, entitled "Making Farm Management Decisions," which is very similar to the earlier publication by the Northeast Committee, entitled "Some Principles and Procedures Used in Farm Management Decisions." However, the Southern Committee has added a set of problems and answers to provide practice in the use of economic principles.

The Northeast Committee has recently released two publications, entitled "Credit for Farming" and "Some Budget Procedures Used in Analyzing Farm Business-Adjustments."

The North Central Committee has, during the past year, published five bulletins, the titles being as follows: "Opportunities for Beginning Farmers," "Is Your Lease Fair?" "Income Tax Management for Farmers," "Getting Started and Established in Farming," and "The Farm Corporation."

Copies of each of these bulletins have been distributed by Howard Diesslin of the Farm Foundation to members of committees outside of the respective region where each publication was published. If a copy of any one of these publications is desired, write to us here in the Farm Management and Production Economics Branch, or to the Farm Foundation.

Personnel Changes

John B. Claar was appointed Associate Director of Extension in Illinois on September 1, 1960. He was chief of our Branch from September 26, 1955, to February 12, 1958. Prior to going to Illinois he served in the Federal Extension Service Administrative Office as a field representative.

Herbert Allen, Iowa, was appointed to the position of district extension economist on December 1, 1959. He is located at Dennison, Iowa. He was promoted from the position of county extension director in Crawford County.

Wilton B. Thomas, Kansas, was appointed district extension specialist in farm management on June 1, 1960, and will be stationed at Manhattan. He was formerly a county agricultural agent.

John E. Thompson, South Dakota, was appointed agricultural extension economist in farm management on July 1, 1960.

Sherman K. Oakleaf, Colorado, was appointed to the position of agricultural economist on July 1, 1960. He had previously been with a farm business association in central Iowa.

Earl Moncur, extension economist in farm management at Wyoming, returned to duty on July 1, 1960. He went on a foreign assignment May 31, 1958, as Chief of Party with the University of Wyoming Team in Afghanistan for approximately two years.

C. A. Bratton, New York, has returned to his position in charge of extension work in agricultural economics at Cornell, following a year's work in Japan.

Byron Huddleston, Arkansas, is back on the job as extension farm management specialist. Byron has for several months been pinch-hitting for a district agent who was on study leave.

Johnnie Sartor, Mississippi, who has been on study leave, is back on the job as associate extension economist.

Charles L. Maddox has been appointed specialist in farm management in Alabama. Before recent graduate work he had county extension experience in Alabama.

Sincerely yours,

Buel Lanpher

Farm Management and Production Economics Branch

Buel Lanpher, Chief
E. P. Callahan
L. M. Vaughan
Virgil Gilman
E. A. Johnson

Enclosures

FOUNDATION AND FASHIONS IN
FARM MANAGEMENT TEACHING

by A. B. Lewis

In working with agricultural economists of technically less-advanced nations who have come to this country to study Farm Management, I often feel that they are being over-trained in one sense and under-trained in another. It seems that unless they study under certain professors--a diminishing number--in certain colleges--and a diminishing number of these--they will not learn what I learned--and still believe--are the basic principles of Farm Management as a science. Instead, what they will learn are certain postulates of conventional, speculative Economic Theory and the supposed application of these to the business side of agriculture, and along with these a vocabulary and an attitude of mind in which it is not possible for the Farm Management economist to discuss problems with farmers in language understandable to them, nor from the farmers' own viewpoint.

The problem is compounded, as I see it, because the new view of what the basic principles of Farm Management as a science are, is thought to require higher mathematics for its expression, and the higher mathematics, in turn, can only be turned out economically by the use of electronic computers. Thus, if we are not careful, the abstruse and other-worldly language of Economic Theory, the notation of higher mathematics, and the electronic computer will separate our newly-educated Farm Management economist of an Asian or Latin-American country from the peasant farmer whose management problems he is supposed to help solve. These barriers will often be in addition to--and a reinforcement of--social and cultural barriers already in existence between farm families and families of the type whose sons go to college, in the countries concerned.

If I thought that the new view of Farm Management principles had brought us closer to the truth in such matters, I should be reconciled to the language, the mathematics, and the machinery. Several possible courses could then be considered. Peasant farmers could all be sent to college to learn conventional Economic Theory, calculus, and matrix algebra, and be "encouraged" to keep a small electronic computer under the house, with the cows. Or a suitable Doctor of Philosophy could be posted in each village, with access to a somewhat larger computer, for the whole village, under a thatched roof of its own. Or a large staff, consisting of all kinds of technical agricultural and economic experts--including one on the breeding, care, and feeding of computers--could be set up in the capital city of the country or of principal states, to grind out formulas to govern the activities of all the peasant farmers on their fragmented farms from peak to plain and from the far Southeast to the far Northwest.

This last, actually, suggests the solution toward which one would probably be building, since it would accord so well with the national planning mentality of the managerial minority, including the economists, of typical underdeveloped countries. In such countries it is a discouraging thing for the intellectuals, a tiny minority of the whole, and more in a hurry for the so-called modernization of their nations than anybody else, to contemplate as individual people the vast

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numbers of the--in their view--backward peasants; and they are continually seeking for ways in which to treat them and direct them as one mass or, rather, as a series of large collectivities of manageable and directible size. What more convenient solution could there be than to make every township into one great farm (or firm?), feed their respective limitations into the state computer every Spring, and withdraw therefrom, in a twinkling, on separate clean sheets of paper, a complete series of agricultural plans for the ensuing year, for every farm collectivity in the nation? All that would remain would be to "encourage"--what a lovely word that is--the collectivities to follow these plans; and if "encouragement" did not work, discouragement from not adopting them probably would.

You may object that this digression has ended on a wrong note, because I began only with an implied question as to where a student from a technically less-advanced country could learn the basic principles of Farm Management, these days. I don't like this ending, either, but the fact remains that when students are enabled to desert reality for the realms of speculative theory and mathematical method--especially when they had an imperfect conception of reality in the first place--a sense of reality is no longer there, and will never be born, against which to assess even the wildest scheme. The things which agricultural planners, without this sense of reality, will try to put into practice would astonish and amuse you. That is, they would amuse you if the pawns in the game were not real people, for whom unreality, when put into practice in the villages, makes life itself into a waking nightmare.

Now I think that there are certain basic principles which distinguish Farm Management as a science which, if made known to students, will give them a secure basis for further study and understanding of farms in any part of the world, and these I think are the framework on which the detailed characteristics of farms of any time or place are arranged. These principles are relationships. They are not in themselves measurements, but are dependent on measurement, of course, for their determination. In general, they are principles relating to factors which affect the income which people derive from a farm, and particularly the income which farm families so derive. They are the answers which Farm Management economists have been able to give to questions about these factors, through the study of actual farms.

One of the most important is, "What is the relationship of the area of the farm to the income to be derived from it?" This question is a very practical and a very difficult one in many countries, including our own, today. It can be answered only by comparing existing farms of varying acreages, of varying kinds of land and in varying climates. It is of little use to try to answer the question speculatively, because farmers are people, and their success in managing areas of varying size is related to their managerial skill, a question of outlook, experience and education.

Nor is it of much use to deal with the question of area as if it were abstract, and not an extension of physical land, because land varies so enormously and so persistently. Our answers depend on the kind of land we mean. We can show that it pays to add some kinds of land to a farm-up to limits depending on the man--and that it is a disadvantage to increase the area of other kinds.

A second great question is, "What is the effect of variations in yield of crops and animal products per unit area, and of animal products per animal, on income

to be derived from the farm?" Let us not be put off here with the idea that we must first throw an armload of flowers in the lap of the God of Diminishing Returns, and await an answer from him, because what we want to find out first is, what really happens? Do high or low yields, by acceptable standards for the cases in hand, pay or not? Of course, we have generally found that they do, on farms the world around.

Stating the matter in the inverse, we may say that area in and of itself, and number of animals in and of itself, are expense-generating factors--that the more value a farmer produces on a farm of a given area and out of animals of a given number, within the range in which farmers actually operate, the more income he gains in relation to his expenses.

How the yields are obtained is another matter. A very influential factor is commonly found to be the productive capacity of the land itself--whether it is good or poor for the region where found--and the productive capacity of the animals. This is not a question of a variation in "input". The land is not, in any but the most superficial sense, an input or an expense: it is the original thing into which, or onto which, the inputs are put; and its value depends on what it yields--not the reverse. Only when the question of the variability of the land has been understood may we logically tackle questions of the effect on yields, expenses, and income, of what the farmer does to the land and the things growing on it, and when, and how; questions of what the farmer grows; and questions of what materials the farmer uses.

We are not limited, of course, to studying only what the farmers now do if experiments will help to light the way, but if we do not study what the farmers do and the effect on yields of what they do, we shall have a poor guide for our experiments, and our recommendations may be aimed at farmers other than our own and at lands and markets which our farmers do not possess.

Returning for a moment to the farm animals, neither these nor the buildings nor other fixed non-land capital of the farm are inputs, in any but a superficial sense. They are originally raised up out of the land itself, are required to make a stretch of land into a producing farm, and cannot be allowed to be depleted if the farm is to continue in production. Their nature depends on the nature of the land, including its position and climate. Their weight and value depend on the capacity of the land, and the extent to which this has been revealed to the farmers who are now in residence. They do not substitute for land, but they are an expression of its potential, and in practice inseparable from it as part of the farm.

A third important question which we try to answer in building a science of Farm Management is, "What is the effect of efficiency of human labor on the income to be derived from the farm?" In seeking an answer to this question we need burn no incense before the God of Marginal Analysis. His face is turned another way, because human labor is not measurable, for our purposes, except in terms of what it accomplishes; and the question of what it accomplishes is not really dependent on any physical muchness of effort, nearly so much as on what the farmer does, and when, and how, with the effort he employs. Once the crop has been weeded--if it needs weeding--any more effort at all of that kind is obviously useless. Effort cultivating when cultivating is inadvisable will reduce the crop, but the same effort a day later may increase it greatly.

What we generally measure when we try to measure labor is only the time when people were present making an effort to produce, or to protect production, and the efficiency of the effort is a ratio between time and accomplishment. There is no value of labor put in, in advance of a measurement of the product--except in a superficial, short-term sense. Labor is not an input, but is people putting things on or taking them away, as the case may be.

This brings us to the question of the use of machinery and other forms of capital by farmers as a means of accomplishing more--to some extent through cultivating more land--in the time available, and with less--not more--physical effort. It is not that machinery or any other form of physical capital can be considered a substitute for labor, unless in a very superficial sense. It is a curious fact that on family-managed farms in civilizations of all degrees of technical advancement, the number of men present and trying to produce income on an individual farm during a year is about the same--usually two and a fraction.

Better machines and materials may for a time only increase the production on existing farms without increasing their size, and in this case the national population rises. Whether or not the farms do increase in size, more and better tools and materials extend and strengthen the arm of the producer, enabling him to provide more people with the basis for a better living.

Machines and materials thus augment, and are never a substitute for, men. Equations that are based on the assumption that land, capital, and labor are at basis the same thing have only fallacy at their root. They lead those who depend on them away from farms as they are, and out of this world of striving people into a world of empty words and emptier mathematics.

In wishing that the fundamentals of Farm Management as a science be taught more widely, I am not being merely a traditionalist. A good foundation for the science of Farm Management has been laid and is there to build upon, but there is much building to be done. How should we measure net income on farms so that our measure of it will accord with the farmer's own idea of success, and will it be as valid in other countries as in the United States? What is the relation of farm income to the value of farm capital? Another seven pages could be used in asking other questions, to which the study of more farms in more countries would provide answers.

REORIENTING THE TRAINING OF AGRICULTURAL ECONOMISTS IN
CONFORMITY WITH CHANGING RESEARCH NEEDS

ALAN R. BIRD*

Michigan State University

This paper cites the slight impact of sociology on research in agricultural economics and points to some modifications in the training of agricultural economists which may help to promote a further integration of sociology with agricultural economics. The incentive to make this study was provided by the recent claim of a Subcommittee 1/ of the Social Science Research Council that many critical economic problems confronting agriculture are not divisible into traditional "thought compartments". This committee accordingly suggested the need for bursting traditional bonds in order to achieve more creative approaches. The present concern with sociology is meant to be illustrative only. Other examples of fragmentation in looking at the problems of agriculture can be readily envisaged.

The Slight Impact of Sociology on Agricultural Economics

With only minor qualifications, the impact of sociology on research in agricultural economics appears to have been negligible.

During the first 35 years of publication of this Journal, only 1.3 percent of total contributions were devoted to rural sociology and economic development together. 2/ While it is understood that the plea of the Social Science Research Council Committee is not directed at representation of sociology per se but rather its incorporation in other analyses, yet the foregoing gives some idea of the relative importance so far afforded sociology by agricultural economists. 3/ Nor can this lack of explicit consideration of sociology by agricultural economists be attributed to an expressed policy of consistent rejection of such contributions on the part of the editors of the Journal.

* Comments from Everett M. Rogers, Glenn L. Johnson, Lester V. Manderscheid and Ralph A. Loomis have helped in the preparation of this paper. The writer takes full responsibility for the analysis, however.

1/ Brinegar, George K., et al, "Reorientations in Research in Agricultural Economics," Jour. Farm Econ., Aug. 1959, pp. 600-619.

2/ Arnold, Carl J. and Barlowe, Raleigh, "Journal of Farm Economics -- First 35 Years," Jour. Farm Econ., Aug. 1954, p. 445.

3/ Brewster, John M. and Parsons, Howard L., "Can Prices Allocate Resources in American Agriculture?", Jour. Farm Econ., Nov. 1946, pp. 938 f.

Cochrane, Willard W., Farm Prices, Myth and Reality, Minneapolis, Univ. of Minnesota Press, 1958. (Other writings by Cochrane are also relevant.)

Jeffrey, Arthur D., "An Application of Scalogram Analysis in Agricultural Economics Research," Jour. Farm Econ., May 1958, pp. 477-485.

Session on "Information Needed for Rural Development Programs" involving Messrs. Paarlberg, Bishop, Fenn, and Back, Jour. Farm Econ., May 1957, pp. 261-284.

Hildebrand, Peter E., and Partenheimer, Earl J., "Socioeconomic Characteristics of Innovators," Jour. Farm Econ., May 1958, pp. 446-449.

Why the Lack of Attention to Sociology?

In spite of the attempts at integrated discussion represented by the programs of the Annual Meetings, 4/ why is there so little obvious interaction between agricultural economists and sociologists? Some suggested reasons are:

1. There are no problems of concern to the agricultural economists which could be profitably analyzed in conjunction with the sociologist.
2. Problems of type (1) exist, but they are not yet identified well enough for either group to be aware of them.
3. Problems of type (1) are identified, but are not important enough to justify greater collaboration on the part of agricultural economists and sociologists.
4. Important problems of type (1) are identified, but the basis for the suggested closer collaboration is inadequately developed or non-existent.

Deficiencies in the Training of Agricultural Economists

The report of the Social Science Research Council Subcommittee has already cast doubt on the truth of the first three propositions. A notable recent report 5/ by a group of leading agricultural economists provides further evidence to refute the first three hypotheses. So does Clawson's review 6/ of this report.

We are accordingly led to consider possible deficiencies in the training of agricultural economists which could handicap further explicit reference to sociology in their research efforts. In accordance with Trelogan's suggestions 7/ we shall consider deficiencies which might (1) handicap communication between different kinds of scientists or (2) retard the development of mutual understanding and respect.

The lack of explicit attention to sociology by agricultural economists cannot reasonably be attributed to inadequate opportunities to meet each other and talk over mutual problems. In 1959, 17 States had Land-Grant institutions in which agricultural economists and rural sociologists were located in the same department (and these 17 included at least 6 which grant Ph.D's in agricultural economics),

4/ Sociology has not been neglected at recent annual meetings of this Association. In 1958, for example, Dr. M. E. John was invited to present the sociologist's viewpoint at one well-attended session with a paper entitled, "The Impact of Technology on Rural Values." Jour. Farm Econ., Dec. 1958, pp. 1636-1642. In 1959, an even better attended joint session was held at Cornell with the rural sociologists. Jour. Farm Econ., Dec. 1959, pp. 1141-1169.

5/ Policy for Commercial Agriculture, Its Relation to Economic Growth and Stability Joint Committee Print, Joint Economic Committee, 85th Congress, 1st Session, Nov. 22, 1957.

6/ Jour. Farm Econ., Aug. 1958, pp. 549-562.

7/ Trelogan, Harry C., "Integration of Economics Research and Problems Encountered," Jour. Farm Econ., Dec. 1954, pp. 841-850.

16 had a separate department of rural sociology located on the same campus, and 17 gave no specific attention to sociology. 8/

We suggest, therefore, that agricultural economists do not have enough formal training in sociology. This deficiency in formal training could contribute to the lack of explicit reference to sociology by agricultural economists because either common languages, or mutual respect, or both, are insufficiently developed.

Almost No Agricultural Economists Trained in Sociology

The 1956 Handbook of the A.F.E.A. lists some 1800 members (excluding institutions) within the United States and some few hundred foreign members. Only 12 of all U. S. members list rural sociology as their major field. Of those listing another major field, almost none gave even second preference to rural sociology and only 64 times out of a total of 3328 second, third, and fourth preferences listed (or less than 2 percent) was rural sociology listed as a field at all. None of the major fields of interest currently listed by agricultural economists had any significant degree of associated representation of rural sociology (see Table 1).

Table 1. Rural Sociology as a Field for Agricultural Economists --
Representation According to Major Field of Interest in 1956

Agricultural Economist's Major Field of Interest	Total Other Fields Listed	Total Rural Sociology Listings	No. Times Rural Soc. 2nd Field
General Agric. Economics	737	18	7
Farm Management and Production Economics	967	15	3
Agricultural Marketing	840	12	2
Land and Water Economics	329	11	2
Statistics and Methodology	191	1	-
Agricultural Policy	264	7	-
Total	3,328	64	14

Source: Jour. Farm Econ., Aug. 1957, Part II, pp. 124-132.

One likely implication of these data is, then, that no more than about 26 of the A.F.E.A. members listed in 1956 (i.e., all those listing rural sociology as their first or second field) would be able to contribute actively to the encouragement of joint consideration of sociology. They would have a difficult role, however, since they would be unlikely to interest more than 200 serious readers, whatever their topic -- only some portion of the total of 86 listing sociology as a field plus a liberal allowance for other curious but untrained members.

8/ "Workers in Subjects Pertaining to Agriculture in Land-Grant Colleges and Experiment Stations, 1958-59." Agric. Handbook No. 116, ARS, USDA, Washington, DC, March 1960. The title of a department does not necessarily include specific reference to both disciplines in cases where both are represented in the one department.

Other Handicaps to Effective Communication

Differences in the average age of different groups of specialists could be making coordinated efforts more difficult. Only 4 of the 14 A.F.E.A. members listing rural sociology as their major field are less than 50. Contrast Clawson's analysis of the 67 agricultural economists and associates who participated in the congressional hearings previously listed. "For this group (i.e., 50 of the 67 for which the information was available), the modal age was about 45 years; nearly half were 40 to 49 with almost exactly as many between 30 and 39 as between 50 and 59; and only three were over 60 years of age." 9/ It is possible, then, that the age barrier would, of itself, tend to restrict even further the opportunities for communication between the agricultural economists and the sociologists.

Failure of one group to make their publications readily enough available to potential cooperators may be handicapping coordinated work, too. None of the 14 sociologists listed a Journal article among his most significant publications. (Each member was asked to list three such publications in addition to his doctoral thesis.) The major published material consisted rather in books and monographs. Some of the latter were bulletins published by Agricultural Experiment Stations.

Conclusion

It has been suggested that analyses of agricultural problems by economists could profitably give greater attention to sociological aspects of these problems. While other explanations for the lag in the use of sociology by economists could be advanced, this article finds such a significant lack of association with sociology in the background of agricultural economists that any reluctance on their part to give more explicit attention to the sociological aspects of agricultural problems is understandable. Even granted a willingness to cooperate on both sides, the returns from any such efforts would very likely be meager until some adjustments in training are undertaken which would provide more common bases for coordinated effort.

One obvious step toward greater cooperation would be to encourage more graduate students in agricultural economics to adopt a field in sociology without diluting the quality of their training in economics.

There are few publications, readily available to agricultural economists, which involve an approach to agricultural problems integrating economics and sociology. The premium on stimulation of students through active debate will, therefore, be so much greater. One might accordingly expect more fruitful results from stimulating several would-be agricultural economists at a few schools to adopt sociology as a field of study, instead of promoting dispersal of this interest among a very few men at each of a larger number of institutions.

In the above paper, sociology has been used as a fairly extreme example of a field of study which could be given more explicit attention by agricultural economists analyzing the problems of American agriculture. The suggested reorientation of training of agricultural economists, with respect to sociology, could very likely be suggested with equal force with respect to a number of other study areas.

9/ Clawson, op. cit., p. 551.

Lessons From Adult Teaching

R. J. Becker
Pennsylvania State University
AFEA, August, 1960

The usual teaching conditions for extension professors teaching adults in the field differ from these for resident staff teaching students in the college. (For brevity, the terms adult and collegian will be used often to represent the respective teaching situations.) A consideration of the conditions and differences may serve for improvement of performance in both teaching situations.

Four conditions to be considered are: (1) student interest, (2) time available, (3) teacher's authority, and (4) student's knowledge.

Interest. What, if anything, is unique about these conditions for teaching agricultural economics? The subject might be unique in this respect: student interest in the subject is always active. This interest is summarized in the caption for man, homo economus. Economics is an ever-present and dominant concern of most men. This should give economics professors an advantage since interest is a necessary -- at least a most useful -- tool for teaching. The teacher's problem is to use this interest.

But there is a difference between the interest of the adult and that of the collegian. The adult has an involved interest. He is interested for immediate application; for direct use to improve his income situation. The collegian has an academic interest; he is not interested in the direct application or the immediate income-increasing aspects of what he learns. Between the interest for use and the interest understanding, the collegian emphasis is on understanding. The adult places emphasis on use. He carries this emphasis so far that he specifies the subject to be covered.

In either case, there are two stages of interest: that in anticipation of the course, and that during the course. This second stage interest is based on knowledge of the actual content of the course.

The teacher's problem in either case is to discern the interest, and provide content that capitalizes upon it; as well as accomplish whatever and he judges to be important.

In either case, there are varying ideas of the importance of material, and varying abilities to judge the importance, on the parts of teachers, adults, and collegians.

Adults generally have more definite notions about importance than have collegians. Their criteria are, mostly, the usefulness of the material for immediate and profitable application. The collegians' criteria are in many cases quite indefinite -- they may have no good basis for such judgments. They rely on the judgment of their teachers.

Time. Another teaching-condition difference is in the amount of time for teaching: the duration of the session, and the number of sessions involved. The adult feels he has less time for getting the information and/or education. The

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teacher has less time to do the job than has the resident professor with students in continuous attendance for a period of years.

Authority. The teacher of adults has less authority in relation to his class than has the resident professor. When teaching collegians, the teacher has the authority of the institution, the grade, the degree, and his position as teacher and older person, usually. Generally, even the status as teacher is less authoritative with adults than it is with collegians.

Knowledge base. There are differences in the knowledge level of the adult class and the college class. The knowledge level in the adult group varies among individuals, and is not known. In contrast, the level in the college student class is more likely to be similar among individuals, and more likely to be known. The collegian, usually has been through a known sequence of studies. Prerequisites are cited for many courses. When the student arrives in a class, the teacher knows that he has had certain subjects, or their equivalent. He knows something of the content of other courses his students have had. Little if any of this knowledge avails the teacher of adults in the field. Some of his class might be at the elementary level; others at the advanced level.

Implications. The significance of the consideration of these conditions and their differences will be touched on for each teaching situation.

Adults. In teaching farm management, for example, to adults, their interest in immediate application can be utilized by showing the application of farm management in their situation or a similar situation for increasing profit.

The amount of time used is related to student interest and knowledge, and to teacher objective. The subject is usually one for which there is a high probability of active interest, so no time is spent developing interest. The knowledge base is not known. It is not always a matter of concern, for the teacher may present a package of results of such nature that only memory is needed by the student. So, no time is spent developing the knowledge and understanding base, if the objective were to exercise intellectual ability.

The two presentations, for transmitting facts and for developing intellectual ability, are not mutually exclusive. Facts can create interest, but simply presenting them to memory does not of itself generate the thought. Mental extensions from or with the fact is a kind of activity that develops intellectual ability. The farm management teacher, for example, should guard against the tendency to emphasize the results of considerations, rather than the farm management method of consideration.

Since the adult is more likely to have his mind made up about the importance of subjects, and about the subjects he wants discussed, some guidance in choosing subjects may be most helpful to him. If he doesn't call for a pertinent subject, its important nature might be discussed, and it might be suggested as a topic for consideration by him. For example, the White House Conference on Children and Youth reported that 85% of present farm youngsters will not become farm owners or managers. This is surely a matter of concern for today's farmers. Yet, it may lack the immediate appeal that the subject profitable fertilization might have. Adult subjects might well reflect the educator's judgement of importance.

Authority with adults derives from content -- facts, and what is done with facts. The extension professor finds that his students, administration, and co-workers expect him to keep abreast of findings in his field, and carry the information to those whom it affects. In this situation there are dangers: that the professor will deal only with the latest information, that he will deal with facts not always reliable, that he will deal with unintegrated facts, that he will do all of the thinking for the class including conclusions about what they should do. If he does not give answers, he may be accused of "hedging," or of improper performance. Such conditions do not always generate teaching for intellectual development. The professor should be careful so that his authority-in-facts does not promote the tendency to accept and apply, only.

The varied knowledge level in the adult class is difficulty. If too much content is elementary, the advanced students may drop out. If the content is advanced, those with the greater need for education may drop out. If the content is out of date, the teacher may find himself addressing only those who wish for the good old days.

Collegians. The interest of the collegian in understanding can be capitalized on in teaching farm management, for example, by showing nature and evolution of the subjects, management, the place of management among other subject fields, the place of farm management in the management field, the general application of farm management, the method of application, the breadth and depth of the subject, the reasons for these dimensions, and the need for management in the farmer's job.

The question might be raised: is this collegian interest in understanding justifiable? Is understanding useful? Of course it is, for it gives the general basis for developing answers to many questions; to questions that likely have not risen at the time of the studies. The interest involves the understanding of the situation, and the ability to cope with it. This requires knowledge of and ability to use the tools for exposing and analyzing a problem. The nature of the understanding base is oriented to the need to cope with the situations. That is, the understanding can be developed in relation to the problems and the tools for solving them. This approach has the added advantage of developing interest. Current situations can be the matrix about which the understanding is developed, in which the problem is isolated, for which the tool is chosen, and to which the tool for solution is applied. The student is not only given the understanding base and the tools, but is provided exercise in them. The idea of change in situations, understandings, and tools should be impressed. The student should not get the impression that the professor has given him all of the answers, and all he needs do is remember them. Such preparation should be serviceable for "coping with the future."

A most significant point is that such understanding has great utility for adults, also. The pressures on the teacher of adults to provide answers needs to be adapted to a system to teaching that also generates understandings.

Since considerable authority attaches to the resident professor, he needs to be careful so that the student doesn't just remember, and repeat at test time. The authority should be subordinated to the development of intellectual ability, and to the idea of change.

Summary. The neglect in the field with adult students is that teaching for understanding is slighted, teaching for use is emphasized. The difficulty at the college with the full-time student is in developing and maintaining the active interest that promotes learning.

Both resident and extension professors need opportunities and facilities for professional improvement. Constant travel in extension doesn't always keep the worker productive. The extension professor needs to keep up with developments of concepts, findings of research, and work and findings in related fields. He needs time and facilities for deciding about the importance of facts, and for interpreting and integrating them. He needs opportunities to develop methods appropriate to current situations.

If the resident professor is to develop the student's interest, he must have interest himself. His class should develop intellectual ability with important material. In part, this means the material should be current. To be so, the professor himself needs to keep up.

It is useful to keep the teaching objectives in mind. The methods need to be adapted to the conditions under which the teaching takes place, in light of the objective.

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SOME TRAINING NEEDS OF
EXTENSION WORKERS IN FARM
MANAGEMENT AND PRODUCTION ECONOMICS

E. P. Callahan, Federal Extension Service, USDA*

Like that of any other professional person, an economist's professional usefulness depends on what he is able to accomplish--not merely on what he knows.

This principle is especially apparent in extension "teaching" of farm management and production economics, where the "students" (farmers, farm suppliers, marketing firms, etc.) can put what they learn to immediate use. In fact, immediate use usually is their purpose in learning it. I understand that the privilege of watching his students apply what they learn as they learn it is usually denied the resident teacher. Even the researcher, I understand, frequently has to wait in agony until others understand the implications and applications of what he has discovered. By then, all too frequently, he is immersed in another research problem.

The fact that his students are primarily interested in doing something at once, and that the problem is what to do, implies that the extension teacher of farm management and production economics needs training to equip and enable him to demonstrate the decision-making process. This requires him to:

- a. Identify a problem (in farm management or production economics) and help the "students" state it in such a way that it is possible to find or approximate the best solution.
- b. Identify the economic principles and concepts that apply to the problem and show how they can be used to find the best solution.
- c. Assemble, or as appropriate, show his students how to find and assemble, the technical and economic information that is needed to solve the problem.
- d. Show his students how to put the information into the framework of the useful economic principles and concepts.
- e. Demonstrate the solution of the problem as stated.
- f. Demonstrate solutions of alternative statements of the problem based on variations in the resources, the situations, and the goals, and values that are involved.
- g. Motivate his students to:
 - (1) Study the principles and concepts for their usefulness in other problems.
 - (2) State and solve similar and related problems on their own.

*The views expressed in this paper are those of the author. They do not necessarily represent those of the Federal Extension Service or the Department of Agriculture.

The above suggests that formal training in agricultural economics for extension economists (in farm management and production economics) needs to include a great deal of rigorous practice in identifying and stating economic problems and working out and testing solutions with the use of the applicable economic principles and concepts. This practice, of course, must be based on such fairly elementary concepts as alternatives, consequences, forecasts, goals, likelihood, resources, value, demand, etc. It should be designed to strengthen his grasp of these concepts.

This practice must also be based on realistic economic theory -- theory that adequately explains what happens in today's economic world. It must explain the economic phenomena we see in agriculture and related industries and services. It must enable one to predict, with reasonable accuracy, the consequences to be expected from a contemplated action on the part of a farmer or a firm or a change in an agricultural program. It may be important to predict aggregate consequences as well as those to a farm or firm.

The most widely useful economic principles and concepts seem to be:

- a. The principle of diminishing returns.
- b. The marginal concept and its main implications; particularly the principle of the maximum profit point and the principle that marginal returns from two or more inputs should be equal when money is scarce.
- c. The concepts of uncertainty and risk.
- d. Strategy principles.
- e. The concept of fixed vs variable costs.
- f. The principles of substitution.
- g. The concept of indivisibilities and its main implications.
- h. The concept of time utility.
- i. The concept of competition and degrees thereof.

The task of the extension economist is to select the ones of these principles and concepts that are applicable to the problem at hand, to assemble the needed information, and to put the information into the framework provided by the principles and concepts. The most versatile tool for doing this is the partial budget. The extension economist needs to become skillful in its use. He also needs practice in using other tools -- such as the estimate of probability -- to supplement partial budgets in demonstrating solutions of problems.

The solutions of most actual problems in farm management or production economics require use of both cardinal and ordinal numbers and values. (Cardinal numbers and values are those used in reply to the questions, how many? or how much? Ordinal numbers indicate rank but not quantity. For example, one might place a higher value on giving one's children a good start than on having an attractive home, but it might be impossible to say how much higher without specific

alternatives to consider and some notion of how much each might boost the children or enhance the attractiveness of the home.)

Much classroom practice in solving farm management and production economics problems deals mostly or altogether with factors to which cardinal numbers or values can be assigned. This is understandable and perhaps necessary in introductory courses. Yet extension economists need to be skilled in demonstrating solutions of real problems, that nearly always involve ordinal as well as cardinal numbers. Economic concepts and principles are just as valid and useful in their solutions.

Consider the case of the farmer who finds he can spend additional money to fertilize a crop heavier than he had planned, with strong odds that it will increase his net income a year in the future. Yet there is some risk that he will lose rather than gain by the heavier fertilization in this particular year. Furthermore he needs all the cash he has to finance his daughter's wedding, and is reluctant to borrow money. The best solution for him, in his situation and with his values and preferences, can be worked out, if the necessary technical information is available, with the use of the tools, concepts and principles listed above.

The most widely needed areas of economic subject matter from which an extension economist needs to draw in solving farm management and production economics problems seem to be:

- a. Input-output relationships.
- b. Sources of price, cost, and outlook data.
- c. Trends and forces at work that cause change in size, capital structure, organization, tenure, and operations of farms.
- d. Economics of scale.
- e. Differences between individual and aggregate consequences of farmer and firm actions.

The Extension economist must not only know his economics but must be able to motivate and help others to learn it and use it. This suggests that he needs to know English, psychology, and logic in addition to his thorough mastery of agricultural economics and the sciences and disciplines that underly it, and in addition to agriculture. In fact, he needs to have a well-rounded education. Perhaps the resident teacher of agricultural economics can help to give him guidance in his very difficult task of choosing what he will study in addition to agricultural economics in his undergraduate and graduate school days.

The above analysis of the extension economist's job and needs for training suggests that he must continue to be a student all of his life. It suggests three reasons why this is true.

First, nothing can fully substitute for experience in gaining skill in motivating farmers and others to study and apply economic concepts and principles. But one must study one's experience to profit from it. One must really "have twenty-three years of experience" as the anecdote runs, rather than "have one year's experience twenty-three times." Extension teachers and resident teachers of agricultural economics can mutually benefit from exchanging teaching experiences.

Second, the extension economist's need for adequate economic theory can be met only by keeping up to date. The structure of our economy changes through time. Theory that satisfactorily explained its behavior a decade or so ago is no longer fully adequate. To keep up to date, the extension economist must enlist the help of his research colleagues in keeping abreast of developments in economic theory.

Third, a well-rounded education is not built for a lifetime. It must be maintained, and it must grow and continue to grow. If it ceases to grow it soon ceases to be well-rounded, because new fields of knowledge come into being and the concerns of society change. It requires reading and studying throughout one's life, in many fields closely and not so closely related to one's job. It also requires participation in seminars, short courses, conferences; etc., in a wide range of interests and subject matter. A campus rich in opportunity for such participation is a good environment for extension economists, and an extension economist who participates in and contributes to a wide range of such activities is strengthening his professional equipment.